

II. CLAIMS

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1. A bullet for optimal Penetration and Expansion capable of meeting current FBI and IWBA standards for law enforcement and personal defense use comprising:
- (a) a jacket formed of malleable metal and having a generally cylindrical side wall, a tapered nose portion disposed forwardly of said cylindrical side wall, and an open forward end; and
- (b) a core mounted within said jacket and made of a malleable material which is deformable under pressure and includes a generally cylindrical base portion of continuously solid construction throughout disposed within said cylindrical wall and having a forward end portion comprised mainly of a plurality of separate segments intimately compressed together, and extending forwardly from said base portion and cooperatively filling said nose portion to a point adjacent said forward end in the form of a hollowed point, but retaining their individuality at least to a limited extent upon the bullet striking the target.
2. The bullet defined in Claim 1, wherein said bullet, when fired, is capable of passing through substantial barrier material before entering its target, and thereafter piercing its target without passing therethrough.
3. The bullet defined in Claim 1, wherein said bullet, when fired, is capable of piercing through substantial barrier material before entering its target, and thereafter entering its target and traveling a distance therewithin equivalent to 12.5-16 inches in 10% ordnance gelatin.

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4. The bullet defined in Claim 1, wherein said bullet, when fired, is capable of piercing through substantial barrier material before entering its target, and thereafter entering its target, and said segments expanding to about 1.5-2.0 times the original diameter of said jacket, thereby reducing the probability of passing through said target.

5. The bullet defined in Claim 1, wherein said bullet, when fired, is capable of piercing through substantial barrier material before entering its target, and thereafter entering its target and said segments thereafter expanding to about 1.5-2.0 times the diameter of said jacket while traveling only between about 12.5-16 inches within the target.

6. The bullet defined in Claim 1, wherein said nose portion of said jacket has weakened areas adjacent said segments and cooperating therewith in expanding the bullet substantially upon the bullet striking its target.

7. A bullet for optimal Penetration and Expansion capable of meeting current FBI and IWBA standards for law enforcement and personal defense use comprising:

- (a) a jacket formed of malleable metal and having a generally cylindrical side wall, a tapered nose portion disposed forwardly of said cylindrical side wall, and an open forward end; and
- (b) a malleable metal core mounted within said jacket and including a generally cylindrical base portion disposed within said cylindrical wall and having a forward end portion comprised mainly of a plurality of closely adjacent segments extending forwardly from said base portion and cooperatively filling said nose portion of said jacket to a point adjacent said forward end in the form

of a hollowed point which is shallow to facilitate shedding off at least a portion of any barrier material which it may have picked up before it entered its target, said segments having had original physical boundaries and having been swaged into said form with sufficient pressure to retain their individuality at least to a limited extent, whereupon when the bullet is fired and strikes a target, said segments will separate without fragmentation along at least some of their original physical boundaries and will expand radially.]

8. The bullet defined in Claim 7, wherein said bullet is constructed and arranged so that, when fired, will pierce substantial barrier material before entering its target, and thereafter will pierce its target while expanding markedly, without passing therethrough.

9. The bullet defined in Claim 7, wherein said bullet, when fired, is capable of piercing through substantial barrier material before entering its target, and thereafter piercing its target and expanding markedly while traveling therewithin to the equivalent of about 12.5-16 inches within 10% ballistic gelatin.

10. The bullet defined in Claim 7, wherein said bullet, when fired, is capable without substantial expansion of piercing through substantial barrier material before entering its target and thereafter piercing its target and expanding to about 1.5-2.0 times its original diameter while moving within said target.

11. The bullet defined in Claim 7, wherein said bullet, when fired, is capable of piercing

through substantial barrier material before entering its target, and thereafter piercing its target and expanding to about 1.5-2.0 times its original diameter while traveling therewithin a distance equivalent to about 12.5-16 inches within 10% ballistic gelatin.

5 12. The bullet defined in Claim 7, wherein said segments, upon the bullet striking the target, will separate along at least some of their original physical boundaries and will expand radially outwardly and rearwardly at least to a point adjacent to the forwardmost portion of said cylindrical wall.

10 13. The bullet defined in Claim 7, wherein said tapered nose portion of said jacket is defined by a plurality of petals extending forwardly from said cylindrical side wall, and upon the bullet striking the target, said segments will separate along their original boundaries and will force said petals radially outwardly to a position extending along the exterior of said side wall.

15 14. The bullet defined in Claim 7, wherein said segments extend forwardly from a position adjacent said base portion of said metal core to a position adjacent said open forward end of said jacket.

20 15. The bullet defined in Claim 7, wherein said bullet is comprised of an equal number of jacket petals and said core segments.

25 16. The bullet defined in Claim 7, wherein said hollowed point is comprised of a cavity having a cavity-defining wall extending at an angle of approximately 30° - 50° relative to the longitudinal axis of the bullet.

17. The bullet defined in Claim 7, wherein said hollow-point has a cavity wall which extends at an angle and converges relative to the longitudinal axis of the jacket to facilitate expansion of said segments within the target of the bullet.

5 18. The bullet defined in Claim 7, wherein the number of said segments is within the range of 4-8.

10 19. A bullet for optimal Penetration and Expansion capable of meeting current FBI and IWBA standards for law enforcement and personal defense use comprising:

- (a) a jacket formed of malleable metal and having a generally cylindrical side wall with a forwardmost portion, an ogived nose portion disposed forwardly of said cylindrical side wall and an open forward end;
- (b) said nose portion being defined primarily by a plurality of circumferentially adjacent petals extending rearwardly from said open forward end of said jacket a distance of at least about one-half of the length of said nose portion; and
- (c) a malleable metal core mounted within said jacket, and including a generally cylindrical base portion within said cylindrical side wall and a plurality of circumferentially adjacent segments of said core extending adjacent said petals and having swaged original boundary lines defining individuality and extending forwardly of said cylindrical base portion and within said nose portion of said jacket and cooperatively filling said nose portion to a point adjacent said forward end and terminating in the form of a hollowed point.

20. The bullet defined in Claim 19, wherein each of said segments is disposed opposite to

one of said petals of said jacket.

21. The bullet defined in Claim 19, wherein at least some of the individuality of the original boundary lines of the original segments is retained at least to a limited extent and, upon the bullet striking a target, each of said segments will expand radially outwardly with an adjacent jacket petal.

22. The bullet defined in Claim 19, wherein during swaging, said original segments will have retained their individuality to an appreciable extent so that upon the bullet striking a target, a substantial number of said original segments will expand radially, each with an adjacent jacket petal, to thereby greatly increase the radial extent of the expansion of the bullet within the target.

23. The bullet defined in Claim 19, wherein said segments while within said jacket extend generally parallel to the longitudinal axis of said jacket.

24. The bullet defined in Claim 19, wherein upon said bullet striking a target, most of said petals are moved outwardly and rearwardly by said segments, to thereby greatly expand the radial extent of the bullet.

25. The bullet defined in Claim 19, wherein upon said bullet striking a target, each of said petals is moved outwardly and rearwardly by one of said segments, which greatly expands the radial compass of the bullet.

26. The bullet defined in Claim 19, wherein said hollowed point is comprised of a cavity having an angled wall the angle of which, relative to the longitudinal axis of said bullet,

is within about a 30°-50° range.

27. The bullet defined in Claim 19, wherein said jacket has a variable wall thickness which increases from said forward end toward the rearward portion of said jacket.

28. The bullet defined in Claim 19, wherein said hollowed point has a generally conical shape.

29. The bullet defined in Claim 19, wherein said petals are defined by a plurality of longitudinally extending scores.

30. The bullet defined in Claim 19, wherein said petals are defined by a plurality of circumferentially spaced deep scores.

31. The bullet defined in Claim 19, wherein each of said segments are disposed opposite at least one of said petals.

32. The bullet defined in Claim 19, wherein each of said segments expands, together with at least one of said petals.

33. The bullet defined in Claim 19, wherein said segments and said petals expand radially to a point at least adjacent the forward-most area of said cylindrical wall.

34. The bullet defined in Claim 19, wherein said petals have a rear end and will expand thereat with said segments to a point adjacent said cylindrical side wall of said jacket upon said bullet striking a target.

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35. The bullet defined in Claim 19, wherein said segments separate along said original boundary lines and cause said petals to expand radially, upon said bullet striking a target.
- 5 36. The bullet defined in Claim 19, wherein said segments of said bullet expand radially, upon said bullet striking a target, a radial distance substantially equal to twice the diameter of said jacket.
- 10 37. The bullet defined in Claim 19, wherein said cylindrical wall has a forward end and said petals are each defined by a pair of circumferentially spaced deep scores in said nose portion of said jacket, said scores extending from a point adjacent the forward end of said nose portion to an area adjacent the forward end of said cylindrical wall.
- 15 38. The bullet defined in Claim 19, wherein said jacket has a variable wall thickness.
39. The bullet defined in Claim 19, wherein said jacket has a uniform wall thickness.
- 20 40. The bullet defined in Claim 19, wherein said petals are defined by a plurality of circumferentially spaced deep scores which extend rearwardly from said open forward end to an area adjacent the forwardmost portion of said cylindrical wall.
- 25 41. The bullet defined in Claim 19, wherein said petals are defined by a plurality of circumferentially spaced deep scores which extend rearwardly from said open forward end to an area located at least halfway to the forwardmost portion of said cylindrical wall.

42. The bullet defined in Claim 19, wherein said jacket is made of metal taken from a group of metals including copper, steel, tungsten, tin, iron, aluminum, zinc, brass, or alloys thereof.

5 43. A bullet for optimal Penetration and Expansion capable of meeting current FBI and IWBA standards for law enforcement and personal defense use comprising:

- (a) a malleable metal bullet core having a generally cylindrical one-piece base portion;
- (b) said core having a plurality of radially-expandable, inter-engaging, swaged nose-forming segments extending forwardly from said base portion and disposed in circumferentially arranged relation about the longitudinal axis of said cylindrical base portion and cooperatively defining a barrier material-shedding hollow-point at their forward ends;
- (c) a jacket formed of a malleable metal and surrounding said core and having a plurality of adjacent nose-and-mouth-defining petals, each of which is disposed radially opposite and outwardly of one of said segments in cooperative-position to expand radially; and
- (d) said petals being defined by a plurality of circumferentially spaced deep scorings in said jacket which extend longitudinally of said jacket.

20 44. The bullet defined in Claim 43, wherein said jacket is made principally of a metal taken from a group of metals including copper, aluminum, tungsten, tin, brass, zinc, steel, iron or alloys thereof.

45. The bullet defined in Claim 43, wherein said core is made principally of materials taken from a group including lead, tungsten, tin, zinc, polymers, or alloys thereof.

46. A bullet for optimal Penetration and Expansion capable of meeting current FBI and
5 IWBA standards for law enforcement and personal defense use, comprising:

- (a) a jacket formed of malleable metal and having a generally cylindrical side wall, a tapered nose portion disposed forwardly of said cylindrical side wall, and an open forward end; and
- (b) a mainly polymeric core mounted within said jacket and including a generally
10 cylindrical base portion disposed within said cylindrical wall, and having a forward end portion comprised mainly of a plurality of compressed interfacing segments of said core extending forwardly from said base portion and cooperatively filling said nose portion to a point adjacent said forward end in the form of a shallow hollowed point.

47. A bullet for optimal Penetration and Expansion capable of meeting current FBI and
15 IWBA standards for law enforcement and personal defense use comprising:

- (a) a jacket formed of malleable metal and having a generally cylindrical side wall, a tapered nose portion disposed forwardly of said cylindrical side wall, and an
20 open forward end;
- (b) a core made of a malleable material which is deformable under pressure mounted within said jacket and including a generally cylindrical base portion disposed within said cylindrical wall and having a forward end portion comprised mainly of a plurality of compressed interfacing segments extending

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forwardly from said base portion and substantially filling said nose portion of said jacket; and

- (c) said nose portion being substantially filled by said segments in the form of a hollowed point, the bullet being capable of passing through barrier material which it may encounter, and being thereafter able to enter its target and expand substantially in a radial direction while traveling about 9-16 inches therewithin.

48. A bullet for optimal Penetration and Expansion capable of meeting current FBI and IWBA standards for law enforcement and personal defense use, comprising:

- (a) a jacket formed of malleable metal and having a generally cylindrical side wall, a tapered nose portion disposed forwardly of said cylindrical side wall, and an open forward end; and
- (b) a malleable metal core mounted within said jacket and including a generally cylindrical base portion disposed within said cylindrical wall and having a forward end portion comprised of a plurality of compressed interfacing segments extending forwardly from said base portion and substantially filling said nose portion of said jacket, and terminating in a hollowed point, said jacket and said core being capable of passing through light to medium barrier material which it may encounter when the bullet is fired and, of entering and expanding within its target to about 1.5 to 2.0 times their initial radial diameter.

49. A bullet for optimal Penetration and Expansion capable of meeting current INS standards for law enforcement and personal defense use comprising:

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- (a) a jacket formed of malleable metal and having a generally cylindrical side wall, a tapered nose portion disposed forwardly of said cylindrical wall, and an open forward end; and
- (b) a core mounted within said jacket and made of a malleable material which is deformable under pressure and includes a generically cylindrical base portion of continuously solid construction throughout disposed within said cylindrical wall and having a forward end portion comprised mainly of a plurality of separate segments intimately compressed together and extending forwardly from said base portion and cooperatively filling said nose portion to a point adjacent said forward end with form of a hollow point, but retaining their individuality at least to a limited extent so that the bullet when fired is capable of piercing through substantial barrier material before entering its target, and thereafter entering its target and traveling a distance therewithin equivalent to a minimum of at least nine (9) inches of penetration within 10% ballistic gelatin.

50. A bullet for optimal Penetration and Expansion capable of meeting current INS standards for law enforcement and personal defense use comprising:

- (a) a jacket formed of malleable metal and having a generally cylindrical side wall, a tapered nose portion disposed forwardly of said cylindrical side wall, and an open forward end; and
- (b) a malleable metal core mounted within said jacket and including a generally cylindrical base portion disposed within said cylindrical wall and having a forward end portion comprised mainly of a plurality of closely adjacent

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segments extending forwardly from said base portion and cooperatively filling said nose portion of said jacket to a point adjacent said forward end in the form of a hollowed point which is shallow to facilitate shedding off at least a portion of any barrier material which it may pick up before it enters its target, said segments having had original physical boundaries and having been swaged into said form with sufficient pressure to retain their individuality at least to a limited extent upon the bullet striking a target, said bullet when fired being capable, without substantial expansion, of piercing through substantial barrier material before entering its target and thereafter piercing its target and expanding markedly therewithin while penetrating a distance equivalent to at least nine (9) inches of penetration within 10% ballistic gelatin.

51. A bullet for optimal Penetration and Expansion capable of meeting current INS standards for law enforcement and personal defense use comprising:

- (a) a jacket formed of malleable metal and having a generally cylindrical side wall, a tapered nose portion disposed forwardly of said cylindrical side wall, and an open forward end'
- (b) a core made of a malleable material which is deformable under pressure mounted within said jacket and including a generally cylindrical base portion disposed within said cylindrical wall and having a forward end portion comprised mainly of a plurality of compressed interfacing segments extending forwardly from said base portion and substantially filling said nose portion of said jacket; and

- (c) said nose portion being substantially filled by said segments in the form of a hollowed point, the bullet being capable of passing through barrier material which it may encounter without substantial expansion, and being thereafter able to enter its target and expand substantially in a radial direction while traveling a distance therewithin equivalent to at least nine (9) inches of penetration within 10% ballistic gelatin.

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